

WHAT IS CLAIMED IS:

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1. An electric power steering apparatus including an electric motor for applying a steering assist torque, corresponding to a steering torque, to a steering system, said electric motor comprising:

an annular outer stator having circumferentially arranged stator windings of nine or a multiple of nine poles; and

an inner rotor positioned within said outer stator and having circumferentially arranged permanent magnets of eight poles;

said stator windings being connected such that they can be driven by electric power of three phases.

2. An electric power steering apparatus according to claim 1, wherein said outer stator comprises nine or a multiple of nine salient poles radially arranged at an equal pitch, each of said salient poles having respective one of said stator windings wound therearound, three or a multiple of three poles of said stator windings being connected in series to provide three phases.

3. An electric power steering apparatus according to claim 2, wherein each of said three phases comprises those three or a multiple of three poles of said stator windings which are not positioned adjacent to each other, connected in series.

4. An electric power steering apparatus according to claim 2, wherein each of said three phases comprises those three or a multiple

of three poles of said stator windings which are positioned adjacent to each other, connected in series.

5. An electric power steering apparatus according claim 1,  
5 wherein said eight poles of said permanent magnets are magnetized radially so that N and S poles are alternately arranged circumferentially.

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